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AMENDMENTS TO THE CLAIMS

1. (currently amended) A system for sequestering carbon dioxide from a gas stream comprising:
 - a gas stream containing carbon dioxide; and
 - a first reaction chamber for reacting a metal silicate with a caustic material to produce a hydroxide of the metal, the metal silicate selected from the group consisting of calcium silicates, magnesium silicates, iron-bearing silicates, and mixtures thereof, and a second reaction chamber for contacting the metal hydroxide with the gas stream containing the carbon dioxide to produce a carbonate of the metal.
2. (original) A system according to claim 1 wherein the gas stream is a flue gas.
3. (currently amended) A system for carbonating a metal silicate comprising:
 - (a) a supply of the metal silicate entering the system, the metal silicate selected from the group consisting of calcium silicates, magnesium silicates, iron-bearing silicates, and mixtures thereof;
 - (b) a source of carbon dioxide entering the system;
 - (c) a reactor structured for converting the metal silicate to a metal carbonate and silica with the use of a caustic material, and with the use of the carbon dioxide; and
 - (d) the metal carbonate and the silica exiting the system as separate products.
4. (original) A system according to claim 3 wherein the metal silicate is magnesium silicate and the metal carbonate is magnesite.
5. (original) A system according to claim 4 wherein the magnesite has a purity of at least about 90%.

6. (original) A system according to claim 3 wherein the silica has a purity of at least about 90%.

7. (original) A system according to claim 3 wherein the source of carbon dioxide is at least one of alkali-metal carbonate and alkali-metal bicarbonate.

8. (currently amended) A system for recovering a useful metal from rock comprising:

- (a) a supply of rock entering the system, the rock containing the useful metal and a metal silicate selected from the group consisting of calcium silicates, magnesium silicates, iron-bearing silicates, and mixtures thereof;
- (b) a source of carbon dioxide entering the system;
- (c) a reactor structured for converting the metal silicate to a metal carbonate, with the use of a caustic material, and with the use of the carbon dioxide;
- (d) apparatus for removing the useful metal from the rock;
- (e) a stream of the metal carbonate exiting the system; and
- (f) a stream of the useful metal exiting the system.

9. (currently amended) A system according to claim 8 wherein the rock is serpentine and the useful metal is iron contained in magnetite.

10. (original) A system according to claim 8 wherein the apparatus for removing the useful metal from the rock is located prior to the reactor.

11. (original) A system according to claim 8 wherein the apparatus for removing the useful metal from the rock is located subsequent to the reactor.

12 - 31. (cancelled)

32. (new) A system according to claim 1 wherein the metal carbonate is a solid phase carbonate.

33. (new) A system according to claim 1 wherein the first and second reaction chambers are located in different reactors.

34. (new) A system according to claim 3 wherein the metal carbonate is a solid phase carbonate.

35. (new) A system according to claim 3 wherein the source of carbon dioxide is a gas stream containing carbon dioxide.

36. (new) A system according to claim 8 wherein the metal carbonate is a solid phase carbonate.

37. (new) A system according to claim 8 wherein the source of carbon dioxide is a gas stream containing carbon dioxide.

38. (new) A system according to claim 8 wherein the apparatus for removing the useful metal from the rock is a magnetic apparatus.

39. (new) A system according to claim 8 wherein the useful metal contains at least one of calcium, magnesium and iron.